

Patent Claims

1. Array consisting of oligo or poly-nucleotide probes applied and immobilised on a solid substrate, characterised in that sequences of a selection or all of the selective monocyte macrophage genes mentioned in the
5 Tables 1 to 6 are fixed on the surface.
2. Array according to Claim 1, characterised in that additional further genes are used, if applicable, which are known to be expressed in each cell and to
10 constitute part of the basic genotype of the cell.
3. Array according to the Claims 1 and 2, characterised in that complementary RNA is bonded on the surface of the array with the aforementioned genes for inverse
15 detection of the genes or gene sequences represented in Tables 1 to 6.
4. Array according to the Claims 1 to 3, characterised in that the genes, their partial and oligomer sequences
20 are selected genes of rheumatoid arthritis or other chronic inflammatory diseases, relevant for the disease and side effects, before and after anti-TNF therapy.
- 25 5. Array according to the Claims 1 to 4, characterised in that the genes, their partial and oligomer sequences are genes of the monocyte/macrophage cell system, which are regulated in a manner specific of the disease.

6. Array according to the Claims 1 to 5, characterised in that, if applicable, alleles, derivatives and/or splicing variants of the gene or partial-gene sequences and oligomer sequences are equally present on the surface.
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7. Array according to the Claims 1 to 6, characterised in that it contains gene sequences on the surface, which present a partial sequence identify of at least 80% in the protein-coding mRNA segments.
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8. Array according to the Claims 1 to 7, characterised in that the surface of the substrates is coated with reactive groups, metal compounds or alloys.
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9. Array according to the Claims 1 to 8, characterised in that the genes or gene sequences are applied in the form of RNA by cDNA spotting techniques, immobilising techniques and techniques with oligomer synthesis or in an enantiomeric form.
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10. Application of the array according to the Claims 1 to 9 with probes labelled for identification with fluorescence dye, an enzyme, protein or radioactive marker and permitting amplification.
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11. Application of the array according to the Claims 1 to 9 with probes, characterised in that the signals are amplified via coupled alkaline phosphatase, peroxidase, biotin digoxigenin, protein molecules, (precious) metal chelates or beads.
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12. Application of the array according to the Claims 1 to 9 with probes, characterised in that streptavidin, (precious) metal chelates, beads or antibodies are employed for additional amplification of the signals

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13. Application of the array according to the Claims 1 to 9 for inverse detection of total RNA or messenger RNA fixed to the solid phase.

10 14. Application of the array according to the Claims 1 to 9 for measurement of the monocyte/macrophage activation or the inflammatory activity in the blood or in the cell tissue.

15 15. Application of the array according to the Claims 1 to 9 for fine diagnosis as well as for early detection of inflammatory diseases and rheumatoid arthritis.

16. Application of the array according to the Claims 1 to 20 9 for follow-up of side effects in anti-TNF therapy in cases of inflammatory diseases and rheumatoid arthritis.

25 17. Application of the array according to the Claims 1 to 9 for monitoring the therapy and for establishment of a prognosis in cases of inflammatory diseases and rheumatoid arthritis.

30 18. Application of the array according to the Claims 1 to 9 for the identification of pharmaceutical targets in cases of inflammatory diseases and rheumatoid arthritis.

19. Use of the genes or gene sequences according to Tables 1 to 6 for methods of detecting individual genes, preferably reverse transcription PCR (RT-PCR).
- 5 20. Use of the genes or gene sequences according to Tables 1 to 6, characterised in that they are provided with a labelling or a reporter function.
- 10 21. Use of the genes or gene sequences according to Tables 1 to 6 for reverse detection of total RNA or messenger RNA bonded to a solid phase in an RNA array, operating on up to 500 tissue and/or blood samples.